

REMARKS

The Office Action mailed December 31, 2002, has been reviewed and the comments of the Patent and Trademark Office have been considered. Claim 1 has been amended. No new matter has been added. Claims 1-16 are pending for consideration.

Amendments

Claim 1 has been amended to correct an informality in that claim.

Allowable subject matter

Applicant appreciates the indication that claims 2-6, 8 and 10-15 contain allowable subject matter. Applicant has not amended claims 2-6, 8 and 10-15 at this time, however, because for the reasons given below, applicant believes that independent claims 1 and 9, from which claims 2-6, 8 and 10-15 ultimately depend, are allowable.

Claim objections

Claim 1 was objected to for informalities. Applicant has amended claim 1 as suggested by the Examiner, and accordingly submits that the objection has been overcome.

Rejection under 35 U.S.C. § 103

Claims 1, 7, 9, and 16 stand rejected under 35 U.S.C. § 103 as being unpatentable over U.S. Patent No. 6,259,062 to Pan (hereafter "Pan"). Applicant respectfully traverses this rejection for the following reasons.

As an initial matter, it appears that the Examiner intended to reject claim 8, not claim 7. Both claims 7 and 8 recite "wherein the gas sealed in said hollow is a helium gas or a nitrogen gas or oxygen gas." Claim 7 depends from dependent claim 6, which has been indicated as containing allowable subject matter. Thus, claim 7 must likewise contain allowable subject matter. Claim 8 depends directly from independent claim 1, which has

been rejected. For the purposes of this response, applicant presumes that the Examiner intended to reject claim 8, not claim 7.

Claim 1

Independent claim 1 is directed to a wafer heat-treatment system. This system comprises walls surrounding a closed space enclosing a wafer and having a hollow sealing a gas in the walls. Thus, the walls have a hollow, or cavity, within the walls and a gas is sealed in the cavity of the walls. The system also comprises a pressure-regulating unit connecting to the hollow for regulating pressure in the hollow. Pan fails to disclose or suggest a pressure regulating unit for regulating the pressure in the hollow of the walls of a wafer heat-treatment system.

Pan discloses in Fig. 4 a process chamber with lamps 20, reflective surfaces 32, and a quartz chamber 44. The quartz chamber 44 comprises an inlet and an outlet through which a radiation absorption medium, such as water, may flow (col. 4, lines 25-37).

Pan, however, fails to disclose that the pressure of the radiation absorption medium within the walls of the quartz chamber 44 is controlled by a pressure regulator. While the Pan system does cause the radiation absorption medium to flow within the walls of the quartz chamber 44, Pan does not disclose that the pressure of the radiation absorption medium need be controlled within the walls. Thus, Pan fails to disclose the recited feature of claim 1 of a pressure-regulating unit connecting to the hollow for regulating pressure in the hollow.

Claim 9

Independent claim 9 is directed to a wafer heat treatment method and comprises processing a wafer, which is in a closed space surrounded by walls each having a hollow, and regulating the pressure in the hollows of the walls. As discussed above, Pan fails to disclose that the pressure of the radiation absorption medium within the walls of the quartz chamber 44 is regulated. Thus, Pan fails to disclose a recited feature of claim 9.

Accordingly, for the reasons given above, applicant respectfully submits that claims 1 and 9, and claims 8 and 16, which respectively depend therefrom, are patentable over Pan. Accordingly, applicant respectfully requests that the rejection of these claims under 35 U.S.C. § 103 be withdrawn.

CONCLUSION

In view of the foregoing amendments and remarks, applicant respectfully submits that all of the pending claims are now in condition for allowance. An early notice to this effect is earnestly solicited. If there are any questions regarding the application, the Examiner is invited to contact the undersigned at the number below.

Respectfully submitted,

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Should additional fees be necessary in connection with the filing of this paper, or if a petition for extension of time is required for timely acceptance of same, the Commissioner is hereby authorized to charge Deposit Account No. 19-0741 for any such fees; and applicant(s) hereby petition for any needed extension of time.

Versions with Markings to Show Changes Made

In the Claims:

1. (Once Amended) A wafer heat-treatment system for processing a wafer by a high-temperature heat-treatment process and cooling the heat-treated wafer, said wafer heat-treatment system comprising:

walls surrounding a closed space [placing] enclosing the wafer and having a hollow sealing a gas in said walls; and

a pressure-regulating unit connecting to said hollow for regulating pressure in said hollow.